



Michael J. Rubio
Manager, CA/OR/WA State Government Affairs

March 4, 2016

Department of Conservation
801 K Street, MS 24-02
Sacramento, CA 95814
ATTN: UIC Workshop
Email: UIC.Regulations@conservation.ca.gov

Re: Underground Injection Control Discussion Draft Rulemaking

Chevron U.S.A. Inc. (Chevron) is a California-based integrated oil and gas exploration and production company and is the largest oil and gas producer in California. We are pleased to provide comment on the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (Division) discussion draft Underground Injection Control (UIC) regulations. Chevron also contributed to and endorses the comments submitted by the Western States Petroleum Association.

Rulemaking Process and Applicability

Chevron supports the efforts of the Division to update the UIC regulations in a way that is not overly prescriptive and retains the flexibility to accommodate technological advances and other improvements in how oilfields are understood and operated over time. While a number of regulatory packages are being contemplated as part of the overall UIC regulations update, we recommend that the Division consider a single rulemaking for underground injection projects (e.g., waterflood, steamflood, cyclic steam, and disposal projects) that clearly outlines the regulatory compliance requirements as they apply to different types of oilfield activities. As closely-related categories of rulemaking are put forth (e.g., well construction, sour gas injection, etc.), we urge the Division to combine them all into a single, integrated set of rules. Additionally, Chevron requests that the updated UIC regulations apply only to new wells installed as part of new underground injection projects after the effective date of the regulations.

Maintenance Steaming

Chevron strongly encourages the Division to clearly distinguish between underground injection projects involving the use of steam that are subject to the UIC regulations (e.g., steamflood and cyclic steaming) and routine maintenance steaming activities that are conducted for the purpose of cleaning out producing wells or connecting producing wells to the steam chest. Specifically, Chevron requests that the Division exempt maintenance steaming from the scope of the UIC regulations. Although this category of well maintenance is not discussed in the regulations, it may be incorrectly identified as a category of underground injection project because it involves the occasional application of steam at low rates, pressures, and volumes to a producing well that is part of an approved steamflood project.

Chevron State Government Affairs
1201 K Street, Suite 1910, Sacramento, CA 95814
Tel 916 325 3000 Fax 916 441 5031
MichaelRubio@chevron.com

In order to clarify the regulatory status of these activities, Chevron requests that the following definition be included in the regulations:

“Maintenance steaming” means injection of steam into production wells within an approved UIC project below the formation fracture pressure for the purpose of heating and cleaning the wellbore and maintaining connectivity between the well and the producing formation.

Because maintenance steam is applied to a producing well (not an injection well) that spends such a small fraction of its life on steam, Chevron also encourages the Division to expressly state in the regulations that Mechanical Integrity Testing does not apply to these activities. Additionally, Chevron recommends that the Division create a new well type (OGSM – Oil & Gas Steam Maintenance) to more accurately capture current monthly reporting of maintenance steam volumes.

Additional Definitions Requested

The discussion draft regulations define an “underground injection project” as “the sustained or continual injection into one or more wells over an extended period...” (emphasis added). Waterflood, steamflood, cyclic steam, and disposal wells are listed as examples of such projects. However, cyclic steaming does not involve sustained or continual injection over an extended period of time. Rather, it involves intermittent injection. To provide more clarity on the scope and applicability of the regulations, Chevron recommends that these injection activities be defined in the regulations. Suggested definitions are provided below:

“Continuous injection well” means a well into which liquid or steam is injected at a sustained pressure continuously over the course of the injection operation.

“Cyclic steam recovery well” means a producing well that intermittently injects steam into the same wellbore which is used for production for the purpose of creating connectivity in the reservoir or lowering the viscosity of the oil. Injection may occur above or below the fracture pressure depending on the purpose of the injection.

Area of Review Definition

Chevron is concerned with the new definition of Area of Review (AOR) in Section 1720.1(a), which would eliminate an operator’s ability to use the Zone of Endangering Influence (ZEI) outlined in the federal Safe Drinking Water Act. Under the federal UIC regulations, the AOR is a minimum fixed radius of ¼ mile from the wellbore, unless an approved mathematical model is used to determine the ZEI (40 CFR § 146.6.). By contrast, the Division’s discussion draft regulations require that the radius be the greater of either ¼ mile for an injection well that is not cyclic steam or 300 feet for a well that is a cyclic steam well.

The ZEI takes into account a number of factors, including: the radius of endangering influence from the injection well or project area, hydraulic conductivity and thickness of the injection zone, time of injection, injection rate, gravity of fluid in the injection zone, and the observed hydrostatic head of the injection zone and underground source of drinking water (USDW). ZEI can be calculated using a suitable mathematical model such as the Neumann Equation, Bernard equation, and the modified Theis equation, among others. Federal law permits the AOR to be the result of the ZEI calculation even if it is less than ¼ mile. If there is inadequate information to calculate the ZEI, a standard ¼ mile radius may be used in its place. Because the ZEI allows for the consideration of individual reservoir properties and potential fluid migration to develop a technically sound basis for review, Chevron requests that it continue to be allowed by the Division in an AOR.

Additionally, the Division's definition would prevent operators from determining the AOR based on a well, field, or project basis, also currently allowed by the federal UIC program. The administrative burden imposed on operators and the Division as a result of this requirement is not necessary, since a technically sound framework already exists for such determinations. Chevron requests that the Division's definition of AOR mirror the federal regulations so that a ZEI can continue to be used in addition to well, field, or project level AORs with ¼ mile radii, as appropriate.

Idle Well Requirements

In Section 1724.7(a)(1)(E)(ii), the Division adds a new requirement for idle wells located within the AOR. It would require wells "that are not plugged and abandoned and that have not been used for injection or production for more than two years have cement plugs across all hydrocarbon zones, the base of the USDW interface, and the base of the freshwater interface." Chevron does not support this requirement. Requiring cement plugs across all applicable zones within idle wells that can demonstrate casing integrity would result in the premature retirement of wells that could have future utility. Wells do not serve as a conduit between zones simply by virtue of being idle. Rather than requiring early abandonment of inactive wells within the AOR, Chevron recommends that an operator be allowed to provide wellbore schematics or testing data indicating casing integrity for any long-term idle wells in the AOR.

Maximum Allowable Surface Pressure Authorization

Chevron recommends that the Division consider alternative language in 1724.10(i), which requires that operators make a "conclusive demonstration" that the injected fluid will remain confined to the intended zone of injection in order to receive authorization to inject above Maximum Allowable Surface Pressure (MASP). Operators demonstrate confinement of fluid to the intended zone of injection in their permits through submittal of technical information. This can include empirical data, engineering analyses based on geotechnical information, and any other information the Division deems necessary to ensure confinement of injection fluid. Moreover, operators employ safeguards such as monitoring and surveillance to ensure that fluids remain in the intended zone, and the regulations have other measures in place to ensure that as well. However, it is unclear as to what information will satisfy the "conclusive" demonstration. It is critical that operators have a clear understanding of the requirements necessary to receive permits to conduct injection operations above MASP. In that regard, Chevron recommends that the Division clarify this section by replacing the words "conclusive demonstration" with "demonstration to the Division's satisfaction..." Without this clarity, it is possible that an important resource for California's oil production could be shut in.

MASP Formula

Separate from the above comment, Chevron requests that the Division's formula for MASP in 1724.10(i) allow operators to account for friction losses, as these can be significant when translating bottom hole injection pressure to surface pressure measurements in current completion designs and flow rates. Friction losses can be calculated based on factors such as downhole pressure measurements and industry standard simulators.

Chevron is committed to working with the Division as the UIC rulemaking process continues. We look forward to the opportunity to discuss industry responses in further detail. Please contact Steve Arita (916-325-3000) for any follow-up to these comments.

Sincerely,

